

Date: Tue, 1 Nov 94 04:30:41 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: List
Subject: Ham-Homebrew Digest V94 #322
To: Ham-Homebrew

Ham-Homebrew Digest Tue, 1 Nov 94 Volume 94 : Issue 322

Today's Topics:

Collins S-line on 30 m.? (2 msgs)
help! need in-amp filter formula (2 msgs)
QRP transmitter circuit question

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sun, 30 Oct 1994 16:15:03 GMT
From: pepperb@govonca.gov.on.ca (Brien Pepperdine)
Subject: Collins S-line on 30 m.?

Hello, I was wondering if anyone has had any positive success as putting a
Collins S-line station on 30 m. I came across an old Hints and Kinks in a
1983
issue of QST. It said that basically (if I remember correctly) it was a matter
of replacing the xtal in the 14.8 position normally used to receive WWV at 15
megs. with the proper (see manual) xtal to get it at 10 megs (then you
have 30
meter operation as well as WWV at the 10 meg. freq.). The Hint said no
re-tuning or alignment was necessary.
I would like know if this does indeed work, indeed requires no re-tuning
etc.
(major at least) and that there is no problem afterward re. attendant
harmonics. I ASSUME this should work, since the S-lines and KWMs were used for
other freq. for military use, etc.

Thank you,
Brien
VE3VAW

pepperb@gov.on.ca

Date: Mon, 31 Oct 1994 18:07:08 GMT
From: jma@ih4gp508.ih.att.com (na8130b00-Schaefer)
Subject: Collins S-line on 30 m.?

In article <1994Oct30.161503.7182@govonca.gov.on.ca>,
Brien Pepperdine <pepperb@govonca.gov.on.ca> wrote:

>
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>(major at least) and that there is no problem afterward re. attendant
>harmonics. I ASSUME this should work, since the S-lines and KWMs were used for
>other freq. for military use, etc.

Well, I did it with my KWM-2. Also used one of the 10 meter positions for
12 meters. Works fine. As I recall the RX peaks up just fine and there
is adequate grid drive for the finals. Might have a little less than optimum
L/C ratio in the final tank circuits, but I use a tuned antenna system so
didn't worry too much about harmonic rejection.

73 es gud luck es hpe cu on 30m.

--
Ed Schaefer jma@ih4gp.att.com ham radio: K9JMA aviation: N97178

Date: Fri, 28 Oct 1994 17:42:23 GMT
From: tkreyche@zdlabs.ziff.com (Tom Kreyche)
Subject: help! need in-amp filter formula

Dear homebrewers,

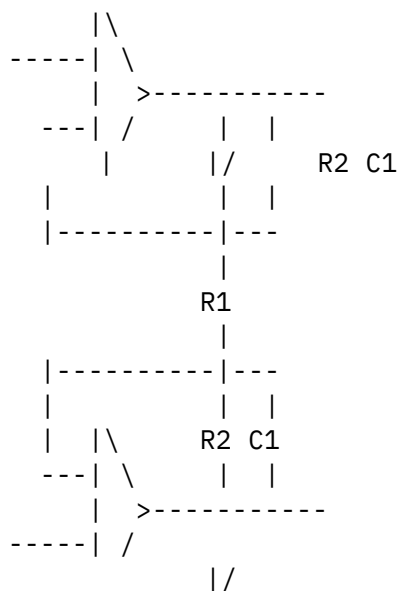
Digital guy needs help with analog circuit design!

I'm driving a differential input delta sigma a/d converter with the "classic" instrumentation amp using three op amps (two in this case since the signal is differential in and differential out. The gain formula is simple, $V_{out} = \Delta V * ((2 * R2 / R1) + 1)$.

I also want to use the circuit to do some low pass filtering (get rid of 60 Hz), nothing fancy needed because of the characteristics of the converter and very low frequency application (25 Hz). I can't find the formula for determining C1 and don't know how to derive it. Looking at some tables, it appears the gain of the circuit (and therefore R1) affects the cutoff frequency.

Thanks,

Tom Kreyche KG6YJ

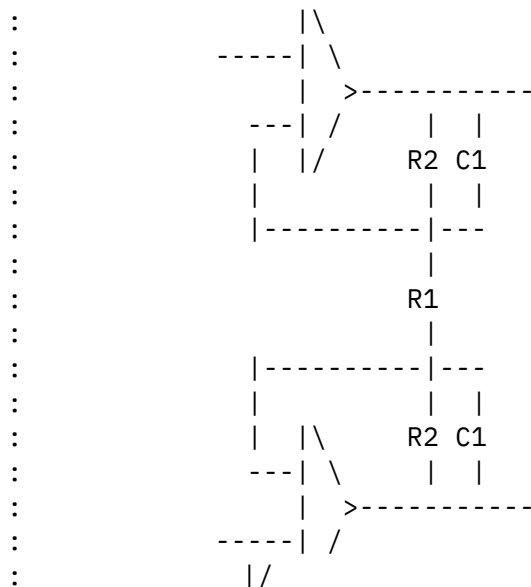


Date: Mon, 31 Oct 1994 18:45:58 GMT
From: tomb@lsid.hp.com (Tom Bruhns)
Subject: help! need in-amp filter formula

Tom Kreyche (tkreyche@zdlabs.ziff.com) wrote:

: I also want to use the circuit to do some low pass filtering (get rid of 60

: Hz), nothing fancy needed because of the characteristics of the converter
 : and very low frequency application (25 Hz). I can't find the formula for
 : determining C1 and don't know how to derive it. Looking at some tables, it
 : appears the gain of the circuit (and therefore R1) affects the cutoff
 : frequency.



The lowpass cutoff will be at $1/(R2 \times C1)$ (in radian frequency) or $1/(2 \times \pi \times R2 \times C1)$ in Hz. Above that, the circuit will do a 20dB/decade rolloff. HOWEVER, R1 DOES enter into it: it goes back "flat" when the gain reaches unity. So if the gain is 10 at DC, then there will be a 10:1 frequency range where the gain drops from 10 to 1; then it stays at 1 beyond that. Of course, the "corners" are rounded, but this should give you close to the right answer; there is a 3dB error at the "corner" frequencies.

If the gain of this thing is high, the output will be close to differential, even if one input is "grounded." However, as the gain goes to unity (at higher frequencies), the output loses common mode rejection. This is something to watch for, if the ADC expects well-balanced differential inputs.

Finally, if you want better filtering (without the levelling off at unity gain), then you can put a filter between the inputs: R in series with each input, and a C across the inputs. This provides no attenuation of common mode signals with frequency; you can get that with separate C's to ground, but then any mismatch will cause conversion of common mode to differential signals at frequencies in the vicinity of the filter cutoff.

Date: Mon, 31 Oct 1994 15:12:05 GMT
From: mam@cbnews.att.com (mark.a.mccuistion)
Subject: QRP transmittor circuit question

This is a QRP Transmitter question:

How come some circuit designs have the 'Final' transistor connected directly to the output filter and on to the antenna,

but sometimes

the output of the final transistor is sent to a coil, which then has another coiling wrapped over it, and that then goes to the output filter and antenna?

Is one better than the other? The direct method is certainly easier - I have a lot of trouble doing coils and inductance and torids. I want to build a QRP rig, and easier is easier, but better is better, so If I have to do it the hard way to to it right, I'm willing (although not anxious.) Any advice on this acraa would be appreciated.

--Mark KB2els
mccuistion@attmail.att.com

Date: Mon, 31 Oct 1994 13:38:27 GMT
From: kludge@netcom.com (Scott Dorsey)

References<G.Moretti-271094093000@130.123.96.67> <kludgeCyC3JH.M90@netcom.com>,
<38p0qj\$ip6@elaine.teleport.com>
Subject: Re: The Little Razor Blade Radio

In article <38p0qj\$ip6@elaine.teleport.com> burt@teleport.com (Burt Keeble) writes:

>Scott Dorsey <kludge@netcom.com> wrote:

>*

>*Yup. You can even make a homebrew ribbon microphone with a couple of
>*magnets, a transformer, and the foil from a Wrigley gum wrapper. But
>*that's another thread.

>

>I would very much enjoy it if you created that thread. This
>something-out-of-nothing stuff is very entertaining!

The 1935 copy of "Hints and Kinks for the Radio Amateur" gives complete details on homebrew ribbon mikes. I pretty much copied the design given

straight out of the book, although I used modern rare earth magnets for higher output, and halved the width of the ribbon in order to reduce mass.

This issue also has an article on condenser microphone construction, but the design really isn't a good one. If you have access to a good, small machine lathe, check out Williamson's article _A Professional Condenser Microphone_ in the July 1963 issue of Audio. It's surprisingly quiet, even with the tube follower that they describe, and the machine work isn't as bad as you might expect.

--scott

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"C'est un Nagra. C'est suisse, et tres, tres precis."

End of Ham-Homebrew Digest V94 #322
